

Abstract

The invention provides improved CDMA, WCDMA (UTMS) or other spread spectrum communication systems of the type that processes one or more spread-spectrum waveforms, each representative of a waveform received from a respective user (or other transmitting device). The improvement is characterized by a first logic element that generates a residual composite spread-spectrum waveform as a function of an arithmetic difference between a composite spread-spectrum waveform for all users (or other transmitters) and an estimated spread-spectrum waveform for each user. It is further characterized by one or more second logic elements that generate, for at least a selected user (or other transmitter), a refined spread-spectrum waveform as a function of a sum of the residual composite spread-spectrum waveform and the estimated spread-spectrum waveform for that user.